OBSERVATIONS & RECOMMENDATIONS

After reviewing data collected from **LAKE WAUKEWAN** the program coordinators recommend the following actions.

WINONA STATION

FIGURE INTERPRETATION

- Figure 1: These graphs illustrate concentrations of chlorophyll-a in the water column. Algae are microscopic plants that are a natural part of lake ecosystems. Algae contain chlorophyll-a, a pigment necessary for photosynthesis. A measure of chlorophyll-a can indicate the abundance of algae in a lake. The historical data (the bottom graph) show a *fairly stable* in-lake chlorophyll-a trend. Mean chlorophyll concentrations decreased this season and have remained well below the New Hampshire mean reference line since Lake Waukewan joined the VLAP program in 1991. While algae are present in all lakes, an excess amount of any type is not welcomed. Concentrations can increase when there are internal and external sources of phosphorus, which is the nutrient algae depend upon for growth. It's important to continue the education process and keep residents aware of the sources of phosphorus and how it influences lake quality.

- Figure 2: Water clarity is measured by using a Secchi disk. Clarity, or transparency, can be influenced by such things as algae, sediments from erosion, and natural colors of the water. The graphs on this page show historical and current year data. The lower graph shows a *slightly worsening* trend in lake transparency. Lake transparency decreased this season, but remained above the state mean. Algal abundance was low and did not affect transparency readings, but weather conditions and individuals' abilities to view the Secchi disk can yield different results. Water clarity decreased from July to August. The 2000 sampling season was considered to be wet and, therefore, average transparency readings are expected to be slightly lower than last year's readings. Higher amounts of rainfall usually cause more eroding of sediments into the lake and streams, thus decreasing clarity. It may be useful to examine the shoreline areas and stream banks for signs of erosion.

- Figure 3: These figures show the amounts of phosphorus in the epilimnion (the upper layer in the lake) and the hypolimnion (the

lower layer); the inset graphs show current year data. Phosphorus is the limiting nutrient for plants and algae in New Hampshire waters. Too much phosphorus in a lake can lead to increases in plant growth over time. These graphs show a *slightly improving* trend for in-lake phosphorus levels, which means levels are decreasing. Epilimnetic phosphorus concentrations were high for the lake this season, but were stable in both months. The increase in rainfall likely washed excess nutrients into the lake, thereby raising the epilimnetic phosphorus concentrations. Hypolimnetic concentrations were not immediately impacted due to stratification of the lake into non-mixing layers. Phosphorus levels in the hypolimnion were back to normal this season after the increase in 1999. Both layers had phosphorus concentrations below the New Hampshire median. One of the most important approaches to reducing phosphorus levels is educating the public. Humans introduce phosphorus to lakes by several means: fertilizing lawns, septic system failures, and detergents containing phosphates are just a few. Keeping the public aware of ways to reduce the input of phosphorus to lakes means less productivity in the lake. Contact the VLAP coordinator for tips on educating your lake residents or for ideas on testing your watershed for phosphorus inputs.

OTHER COMMENTS

- Conductivity levels (Table 6) and total phosphorus concentrations (Table 8) increased at most Winona Station sites from the 1999 values. The rains this season likely washed excess pollutants and nutrients into the waters. Conductivity increases often indicate the influence of human activities on surface waters. Septic system leachate, agricultural runoff, iron deposits, and road runoff can all influence conductivity. It would be useful to uncover the reasons for increased conductivity as we continue to monitor the lake. This can be accomplished through watershed walks and bracketing the streams.

- Monitors have sampled the Inlet via the lake for several years. We recommend sampling this site downstream from the road that passes over it. By sampling the flowing water we will be able to determine more readily the water quality of the Inlet. Sampling too close to the lake often corrupts sample results for the tributary if the lake water back flushes into it.

- The July dissolved oxygen profile indicated low concentrations at the middle and bottom layers (Table 9). While the oxygen concentrations were not below 1 mg/L they were quite low from 11-meters to the bottom. The phosphorus was not high in the hypolimnion at this time, which indicates internal loading was not occurring. Please refer to the 1999 VLAP report for more information regarding internal loading. However, the concentrations might be even more depleted in August or September. As the waters warm towards the end of the

summer bacteria in the bottom sediments that are decomposing organic material can use up the bottom oxygen. For this reason, we would like to visit Lake Waukewan later in the summer next year to observe the oxygen conditions in the water column. Contact the VLAP Coordinator at (603) 271-2658 to schedule our annual visit.

MAYO STATION

FIGURE INTERPRETATION

- Figure 1: There is a *fairly stable*, but slightly increasing, trend in chlorophyll-a concentrations at this station. This year's chlorophyll concentrations were similar to those observed at the Winona Station. The dominant algae were golden-browns and diatoms, which were also dominant at the Winona Station. Chlorophyll concentrations did not increase with the wet weather this season, which is a positive sign for the Mayo Station. The concentrations were again well below the New Hampshire mean for chlorophyll-a.

- Figure 2: Water clarity remains *fairly stable* at this station. Clarity was higher at this station than at the Winona Station, and remained consistent in July and August. Transparency continues to be above the NH mean reference line in both stations.

- Figure 3: The trend in phosphorus concentrations seems to be *fairly stable* at the Mayo Station. The epilimnetic and hypolimnetic average concentrations were below the state median reference line. Epilimnetic concentrations increased in a similar fashion as at the Winona Station, but August concentrations were slightly lower here. Hypolimnetic phosphorus concentrations decreased as they did at the Winona Station, and were slightly higher in August. This station had an overall higher hypolimnetic phosphorus concentration.

OTHER COMMENTS

- Conductivity levels increased at the Mayo Station as well (Table 6). Again, the rain is the likely culprit for the increase.

- The dissolved oxygen at the Mayo Station was slightly higher at the bottom of the water column (Table 9). The slightly shallower water column may account for the higher oxygen concentration. However, as we stated above, the concentrations may decline as the summer progresses.

USEFUL RESOURCES

Guidelines for Redeveloping Shoreland Property, WD-BB-33, NHDES Fact Sheet. (603) 271-3503 or www.state.nh.us

The Wetlands Resource, WD-WB-7, NHDES Fact Sheet, (603) 271-3503 or www.state.nh.us

2000

A Brief History of Lakes, NH Lakes Association pamphlet, (603) 226-0299 or www.nhlakes.org

Vegetated Phosphorus Buffer Strips, NH Lakes Association pamphlet, (603) 226-0299 or www.nhlakes.org

Road Salt and Water Quality, WD-WSQB-7, NHDES Fact Sheet, (603) 271-3503 or www.state.nh.us

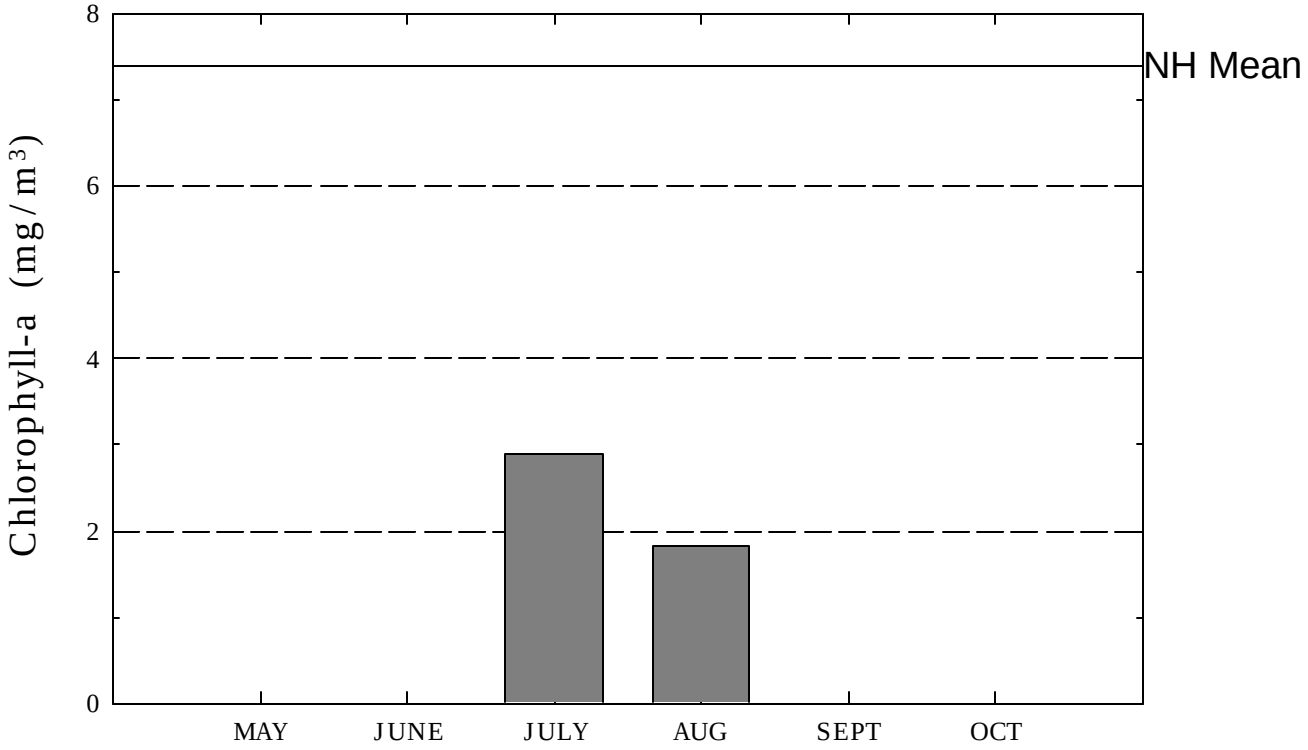
What Can You Do to Prevent Shoreland Erosion?, WD-BB-30, NHDES Fact Sheet, (603) 271-3503 or www.state.nh.us

Through the Looking Glass: A Field Guide to Aquatic Plants. North American Lake Management Society, 1988. (608) 233-2836 or www.nalms.org

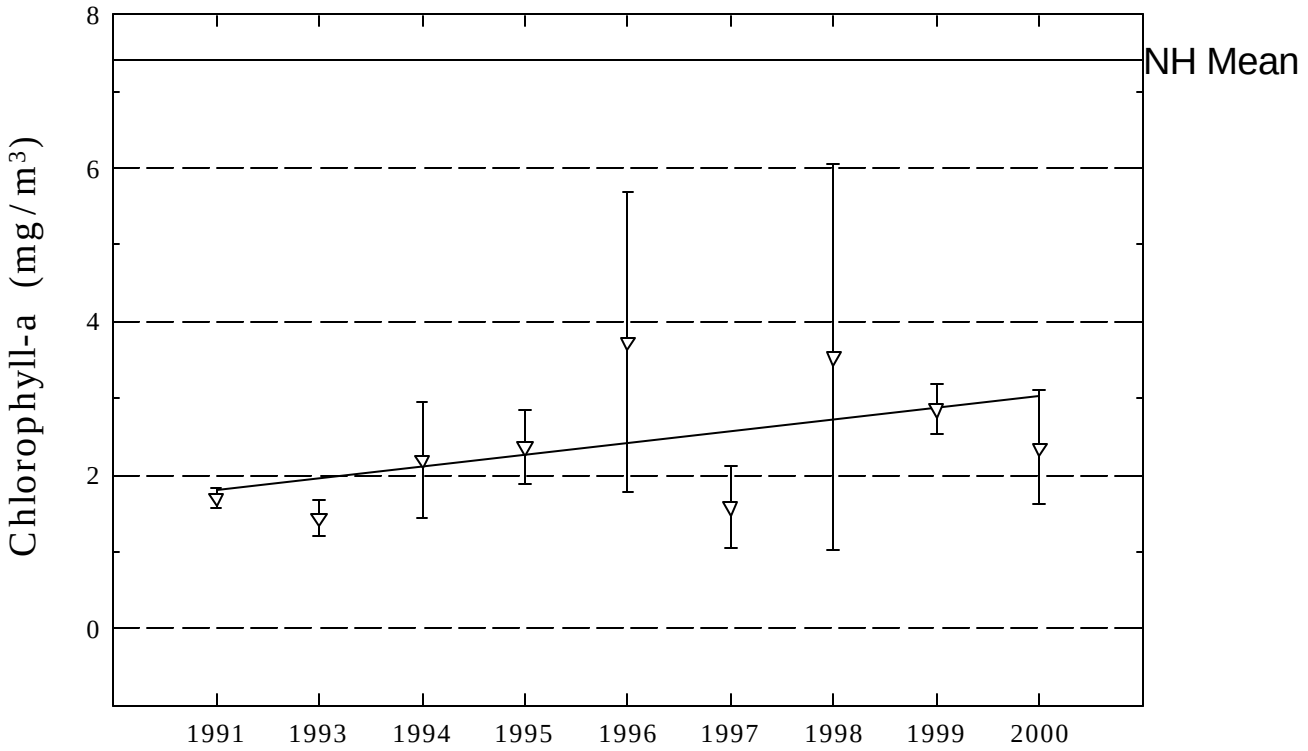
Weed Watchers: An Association to Halt the Spread of Exotic Aquatic Plants, WD-BB-4, NHDES Fact Sheet, (603) 271-3503 or www.state.nh.us

Lake Waukewan, Winona

Figure 1. Monthly and Historical Chlorophyll-a Results



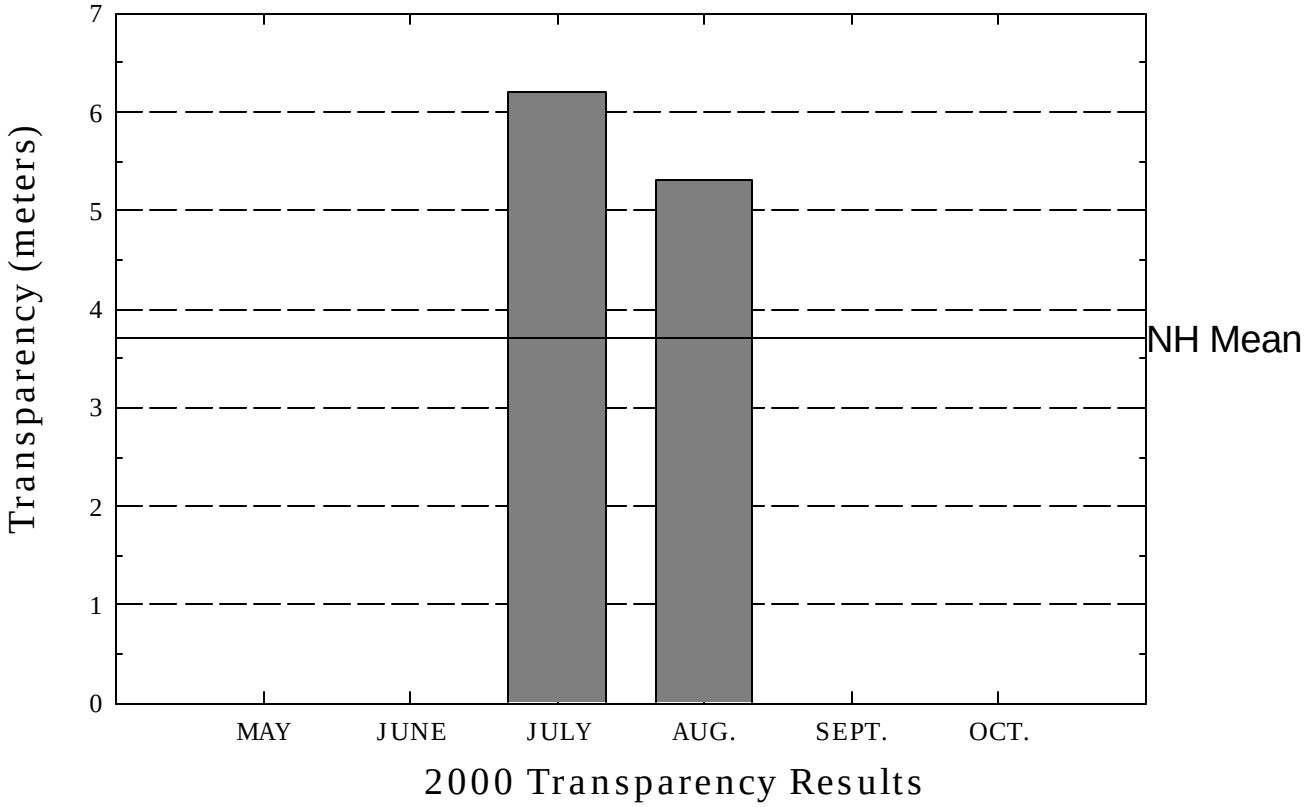
2000 Chlorophyll-a Results

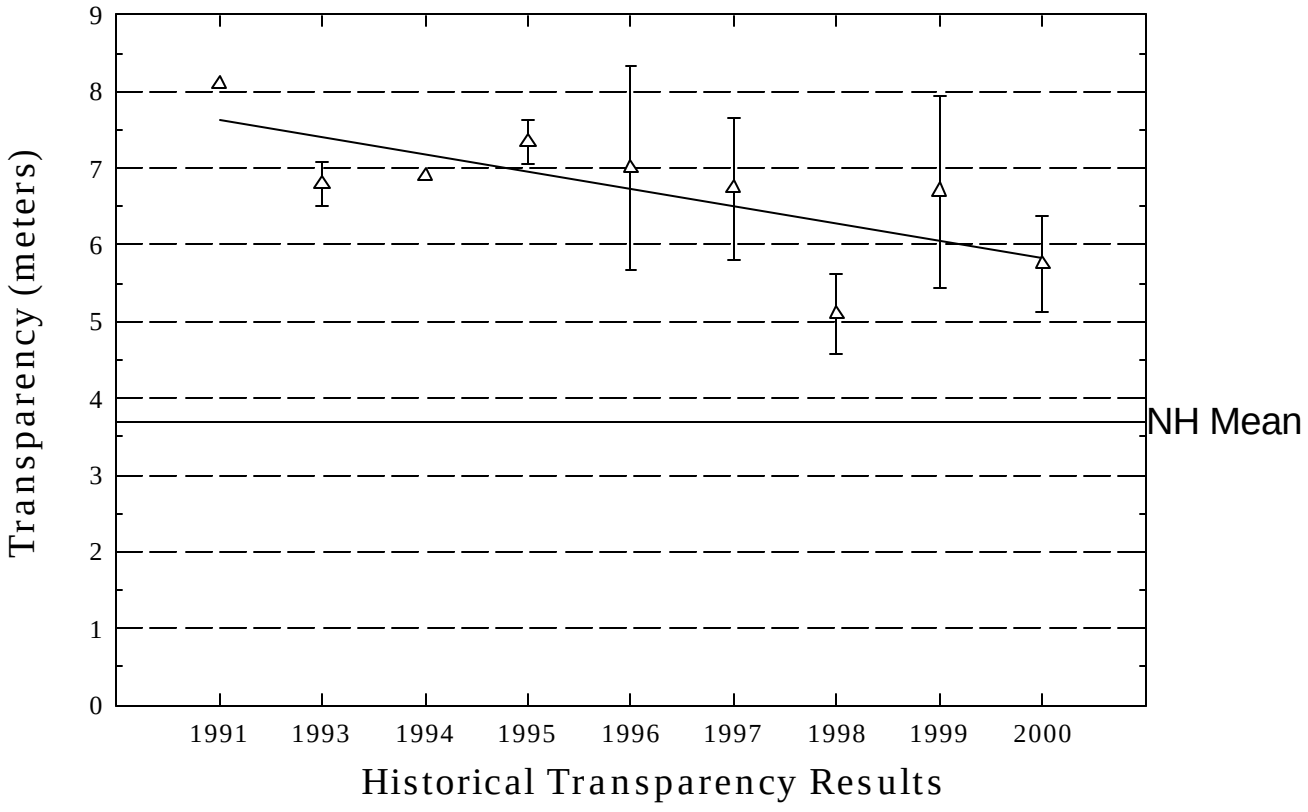


Historical Chlorophyll-a Results

Lake Waukewan, Winona

Figure 2. Monthly and Historical Transparency Results





Lake Waukewan, Winona

Figure 3. Monthly and Historical Total Phosphorus Data.

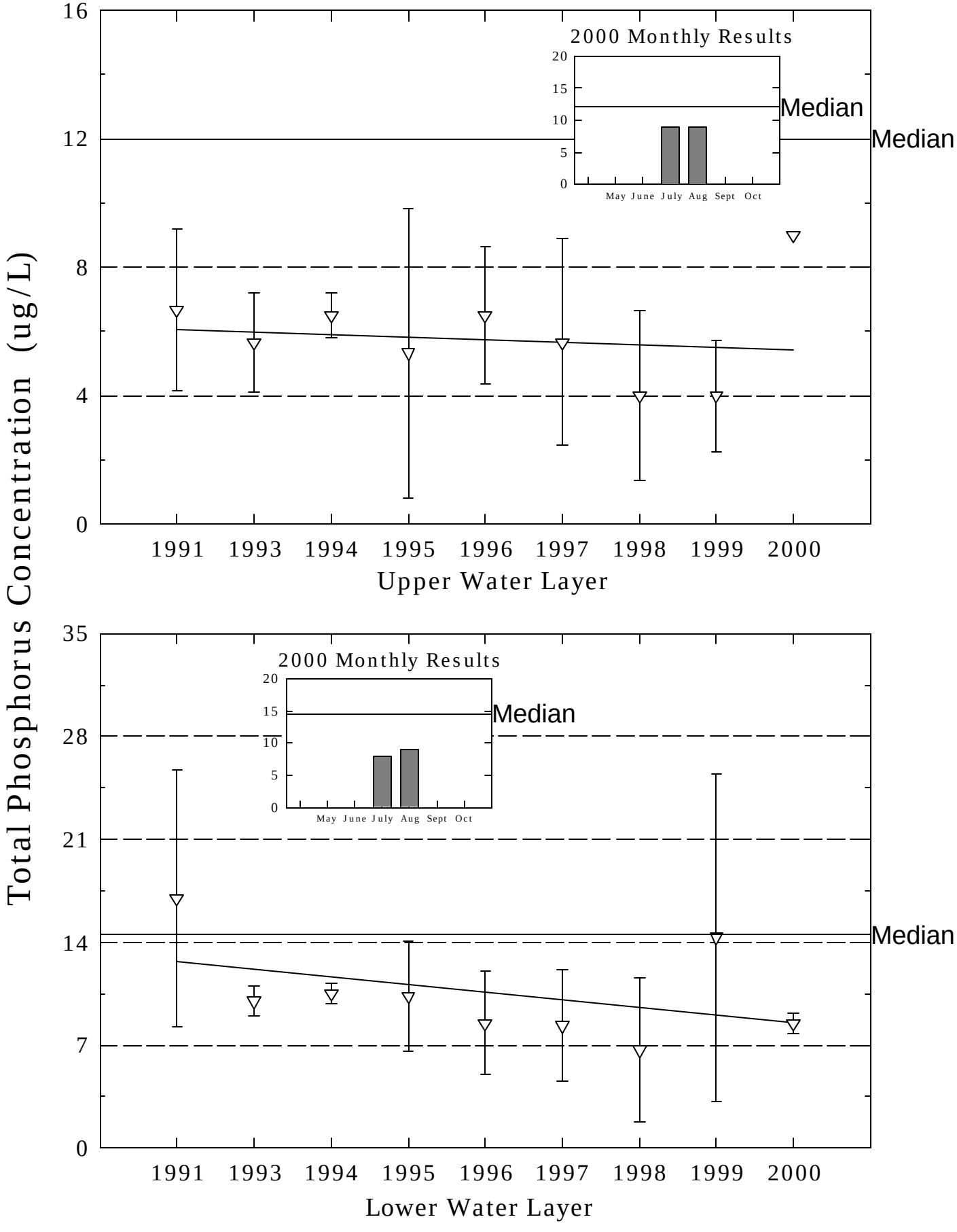


Table 1.

WAUKEWAN, LAKE WINONA

MEREDITH

Chlorophyll-a results (mg/m^3) for current year and historical sampling periods.

Year	Minimum	Maximum	Mean
1991	1.60	1.80	1.70
1993	1.28	1.99	1.62
1994	1.54	2.73	1.97
1995	1.82	2.72	2.36
1996	2.35	5.12	3.73
1997	1.12	2.18	1.58
1998	1.99	6.45	3.54
1999	2.51	3.13	2.86
2000	1.83	2.89	2.36

Table 2.

WAUKEWAN, LAKE WINONA

MEREDITH

Phytoplankton species and relative percent abundance.

Summary for current and historical sampling seasons.

Date of Sample	Species Observed	Relative % Abundance
05 / 31 / 1991	CHRYSOSPHAERELLA	7
	DINOBRYON	75
	ASTERIONELLA	12
06 / 19 / 1993	ASTERIONELLA	80
	DINOBRYON	13
06 / 24 / 1993	ASTERIONELLA	57
	COLONIES	29
	DINOBRYON	11
07 / 19 / 1994	CHRYSOSPHAERELLA	61
	TABELLARIA	20
08 / 03 / 1995	CHRYSOSPHAERELLA	39
	DINOBRYON	22
	GLOEOCYSTIS	11
09 / 09 / 1996	CHRYSOSPHAERELLA	30
	DINOBRYON	22
	CERATIUM	14
07 / 08 / 1997	ASTERIONELLA	52
	TABELLARIA	27
	CHRYSOSPHAERELLA	8
07 / 09 / 1998	ASTERIONELLA	33
	SYNURA	32
	CHRYSOSPHAERELLA	24
07 / 14 / 1999	RHIZOSOLENIA	39
	SYNURA	23
	CHRYSOSPHAERELLA	9
07 / 10 / 2000	RHIZOSOLENIA	47
	CHRYSOSPHAERELLA	35
	SYNURA, CERATIUM	5

Table 3.

WAUKEWAN, LAKE WINONA

MEREDITH

Summary of current and historical Secchi Disk transparency results (in meters).

Year	Minimum	Maximum	Mean
1991	6.1	8.1	7.1
1993	5.0	7.0	6.2
1994	4.5	6.9	5.7
1995	7.0	7.5	7.3
1996	5.5	8.0	7.0
1997	6.1	7.8	6.7
1998	4.5	5.5	5.1
1999	5.5	8.0	6.7
2000	5.3	6.2	5.7

Table 4.

WAUKEWAN, LAKE WINONA

MEREDITH

pH summary for current and historical sampling seasons.
Values in units, listed by station and year.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1991	6.31	7.15	6.65
	1993	7.14	7.28	7.19
	1994	7.05	7.28	7.11
	1995	6.69	7.03	6.86
	1996	6.73	7.32	6.93
	1997	6.79	7.09	6.95
	1998	6.67	7.01	6.86
	1999	6.82	6.89	6.85
	2000	6.91	6.93	6.92
HYPOLIMNION				
	1991	6.28	6.50	6.35
	1993	6.30	6.52	6.39
	1994	6.30	6.36	6.33
	1995	6.24	6.52	6.40
	1996	6.43	6.61	6.51
	1997	6.25	6.39	6.32
	1998	6.16	6.48	6.30
	1999	6.25	6.42	6.36
	2000	6.31	6.96	6.52
INLET				
	1991	6.31	6.50	6.42
	1993	6.27	7.05	6.55
	1994	6.63	6.69	6.66
	1995	6.37	6.71	6.51

Table 4.

WAUKEWAN, LAKE WINONA

MEREDITH

pH summary for current and historical sampling seasons.
Values in units, listed by station and year.

Station	Year	Minimum	Maximum	Mean
	1996	6.35	6.53	6.43
	1997	6.28	6.96	6.52
	1998	6.25	6.30	6.28
	1999	6.35	6.65	6.43
	2000	6.28	6.37	6.32
METALIMNION				
	1991	6.99	7.18	7.09
	1993	7.05	7.24	7.15
	1994	6.92	6.98	6.95
	1995	6.47	7.09	6.70
	1996	6.24	6.83	6.44
	1997	6.88	7.04	6.96
	1998	6.46	6.89	6.67
	1999	6.32	6.56	6.42
	2000	6.64	6.92	6.76
OUTLET				
	1991	6.91	7.09	6.99
	1993	6.99	7.47	7.21
	1994	7.09	7.09	7.09
	1995	6.67	7.09	6.86
	1996	6.68	6.84	6.75
	1997	6.82	6.86	6.83
	1998	6.67	6.99	6.78
	1999	6.69	6.76	6.72
	2000	6.77	6.90	6.83

Table 4.

WAUKEWAN, LAKE WINONA

MEREDITH

pH summary for current and historical sampling seasons.
Values in units, listed by station and year.

Station	Year	Minimum	Maximum	Mean
PERKINS COVE				
	1991	6.88	7.09	6.99
	1993	7.04	7.21	7.12
	1994	6.96	7.04	7.00
	1995	6.80	7.15	6.90
	1996	6.68	6.75	6.71
	1997	6.82	6.95	6.89
	1998	6.77	6.86	6.81
	1999	6.66	6.85	6.77
	2000	6.76	6.85	6.80

Table 5.

WAUKEWAN, LAKE WINONA

MEREDITH

Summary of current and historical Acid Neutralizing Capacity.
Values expressed in mg/L as CaCO .

Epilimnetic Values

Year	Minimum	Maximum	Mean
1991	5.60	6.30	5.95
1993	6.80	9.70	7.87
1994	6.00	8.00	7.07
1995	6.60	8.90	7.73
1996	6.30	7.00	6.65
1997	6.50	6.90	6.73
1998	6.40	7.10	6.70
1999	6.10	7.10	6.53
2000	7.10	7.30	7.20

Table 6.

WAUKEWAN, LAKE WINONA
MEREDITH

Specific conductance results from current and historic sampling seasons. Results in uMhos/cm.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1991	71.0	73.2	71.8
	1993	70.5	73.7	71.8
	1994	72.8	75.7	74.4
	1995	72.1	73.8	72.7
	1996	68.3	69.2	68.7
	1997	67.1	68.1	67.5
	1998	65.8	72.1	69.1
	1999	78.2	82.3	80.1
	2000	86.7	87.7	87.2
HYPOLIMNION				
	1991	68.7	76.2	72.0
	1993	69.7	79.5	73.3
	1994	72.3	79.1	75.5
	1995	73.3	79.2	75.9
	1996	69.0	75.6	72.3
	1997	67.1	73.0	70.2
	1998	74.8	90.8	81.9
	1999	82.6	92.4	87.6
	2000	86.9	94.8	90.9
INLET				
	1991	56.7	74.3	65.7
	1993	56.2	70.2	61.5
	1994	56.0	61.1	58.5
	1995	61.1	61.1	61.1

Table 6.

WAUKEWAN, LAKE WINONA
MEREDITH

Specific conductance results from current and historic sampling seasons. Results in uMhos/cm.

Station	Year	Minimum	Maximum	Mean
	1996	45.9	46.6	46.2
	1997	50.5	59.7	53.6
	1998	45.5	57.7	51.1
	1999	61.2	69.4	66.6
	2000	65.3	67.9	66.6
METALIMNION				
	1991	70.5	73.1	71.9
	1993	70.5	73.2	71.9
	1994	71.3	74.4	72.3
	1995	71.7	74.5	72.7
	1996	69.0	72.7	70.8
	1997	66.7	68.2	67.5
	1998	69.9	73.5	71.8
	1999	79.3	80.4	80.0
	2000	85.6	87.9	86.7
OUTLET				
	1991	71.6	74.2	72.9
	1993	70.6	72.3	71.3
	1994	71.5	71.5	71.5
	1995	74.1	75.0	74.5
	1996	31.0	69.2	50.1
	1997	68.4	69.0	68.6
	1998	66.2	72.7	69.0
	1999	79.8	82.8	81.3
	2000	87.6	88.0	87.8

Table 6.

WAUKEWAN, LAKE WINONA
MEREDITH

Specific conductance results from current and historic sampling seasons. Results in uMhos/cm.

Station	Year	Minimum	Maximum	Mean
PERKINS COVE				
	1991	71.6	90.6	78.4
	1993	71.1	71.9	71.4
	1994	71.8	73.4	72.6
	1995	73.6	74.1	73.8
	1996	68.5	68.7	68.6
	1997	67.9	68.4	68.1
	1998	67.4	73.3	69.8
	1999	79.5	83.1	80.7
	2000	87.0	87.5	87.3

Table 8.

WAUKEWAN, LAKE WINONA

MEREDITH

Summary historical and current sampling season Total Phosphorus data. Results in ug/L.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1991	4	9	6
	1993	4	7	5
	1994	6	13	8
	1995	1	10	5
	1996	5	8	6
	1997	2	8	5
	1998	1	6	4
	1999	2	5	4
	2000	9	9	9
HYPOLIMNION				
	1991	11	27	17
	1993	9	11	10
	1994	10	20	13
	1995	6	13	10
	1996	6	11	8
	1997	4	11	8
	1998	1	10	6
	1999	6	27	14
	2000	8	9	8
INLET				
	1991	12	24	16
	1993	9	31	18
	1994	11	26	18
	1995	1	13	7

Table 8.

WAUKEWAN, LAKE WINONA

MEREDITH

Summary historical and current sampling season Total Phosphorus data. Results in ug/L.

Station	Year	Minimum	Maximum	Mean
	1996	9	11	10
	1997	7	13	9
	1998	3	9	6
	1999	7	9	7
	2000	6	9	7
METALIMNION				
	1991	7	14	9
	1993	4	9	6
	1994	5	10	7
	1995	5	12	7
	1996	9	9	9
	1997	1	8	5
	1998	3	7	5
	1999	6	8	7
	2000	8	9	8
OUTLET				
	1991	2	10	6
	1993	3	11	6
	1994	11	11	11
	1995	1	8	5
	1996	7	8	7
	1997	5	11	8
	1998	6	10	7
	1999	4	5	4
	2000	8	14	11

Table 8.

WAUKEWAN, LAKE WINONA

MEREDITH

Summary historical and current sampling season Total Phosphorus data. Results in ug/L.

Station	Year	Minimum	Maximum	Mean
PERKINS COVE				
	1991	6	7	6
	1993	4	9	6
	1994	5	15	10
	1995	4	11	7
	1996	6	7	6
	1997	4	6	5
	1998	2	7	5
	1999	4	7	5
	2000	8	10	9

Table 9.

WAUKEWAN, LAKE WINONA

MEREDITH

Current year dissolved oxygen and temperature data.

Depth (meters)	Temperature (celsius)	Dissolved Oxygen (mg/L)	Saturation (%)
		July 10, 2000	
0.1	21.9	7.1	81.3
1.0	21.6	7.1	80.9
2.0	21.5	7.1	80.6
3.0	21.4	7.1	80.8
4.0	21.4	7.2	81.2
5.0	21.3	7.2	81.0
6.0	20.5	7.6	84.1
7.0	16.6	8.3	84.9
8.0	14.6	7.5	74.1
9.0	13.5	6.6	63.4
10.0	12.0	4.9	45.6
11.0	11.0	3.3	29.7
12.0	10.4	2.8	24.7
13.0	10.1	2.7	24.1
14.0	10.0	2.6	23.1
15.0	9.9	2.6	23.1
16.0	9.8	2.6	23.0
17.0	9.8	2.6	22.8
18.0	9.8	2.6	23.3
19.0	9.8	2.7	23.9
20.0	10.1	2.8	25.1

Table 10.

WAUKEWAN, LAKE WINONA

MEREDITH

Historic Hypolimnetic dissolved oxygen and temperature data.

Date	Depth (meters)	Temperature (celsius)	Dissolved Oxygen (mg/L)	Saturation (%)
May 30, 1991	20.0	8.8	9.2	78.9
July 26, 1991	21.0	10.3	1.3	11.6
June 19, 1993	11.0	12.3	8.3	77.0
July 19, 1994	16.0	10.0	3.1	27.0
July 19, 1994	21.0	10.0	2.6	23.0
August 3, 1995	21.0	9.6	0.8	7.0
September 9, 1996	23.0	10.4	0.2	2.0
July 8, 1997	20.0	11.1	4.7	42.0
July 9, 1998	19.0	9.9	2.4	21.0
July 14, 1999	20.0	10.2	1.2	11.0
July 10, 2000	20.0	10.1	2.8	25.1

Table 11.

WAUKEWAN, LAKE WINONA

MEREDITH

Summary of current year and historic turbidity sampling.
Results in NTU's.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1997	0.2	0.3	0.3
	1998	0.2	0.9	0.5
	1999	0.2	0.4	0.3
	2000	0.2	0.3	0.2
HYPOLIMNION				
	1997	0.4	2.0	1.1
	1998	0.3	2.1	1.4
	1999	1.3	1.9	1.5
	2000	0.3	2.3	1.3
INLET				
	1997	0.3	0.5	0.4
	1998	0.2	0.4	0.3
	1999	0.3	0.4	0.3
	2000	0.2	0.4	0.3
METALIMNION				
	1997	0.2	0.6	0.4
	1998	0.3	0.8	0.5
	1999	0.4	0.8	0.7
	2000	0.2	0.3	0.3
OUTLET				
	1997	0.3	0.5	0.4
	1998	0.2	0.7	0.5
	1999	0.4	0.7	0.5
	2000	0.3	0.6	0.4
PERKINS COVE				

Table 11.

WAUKEWAN, LAKE WINONA

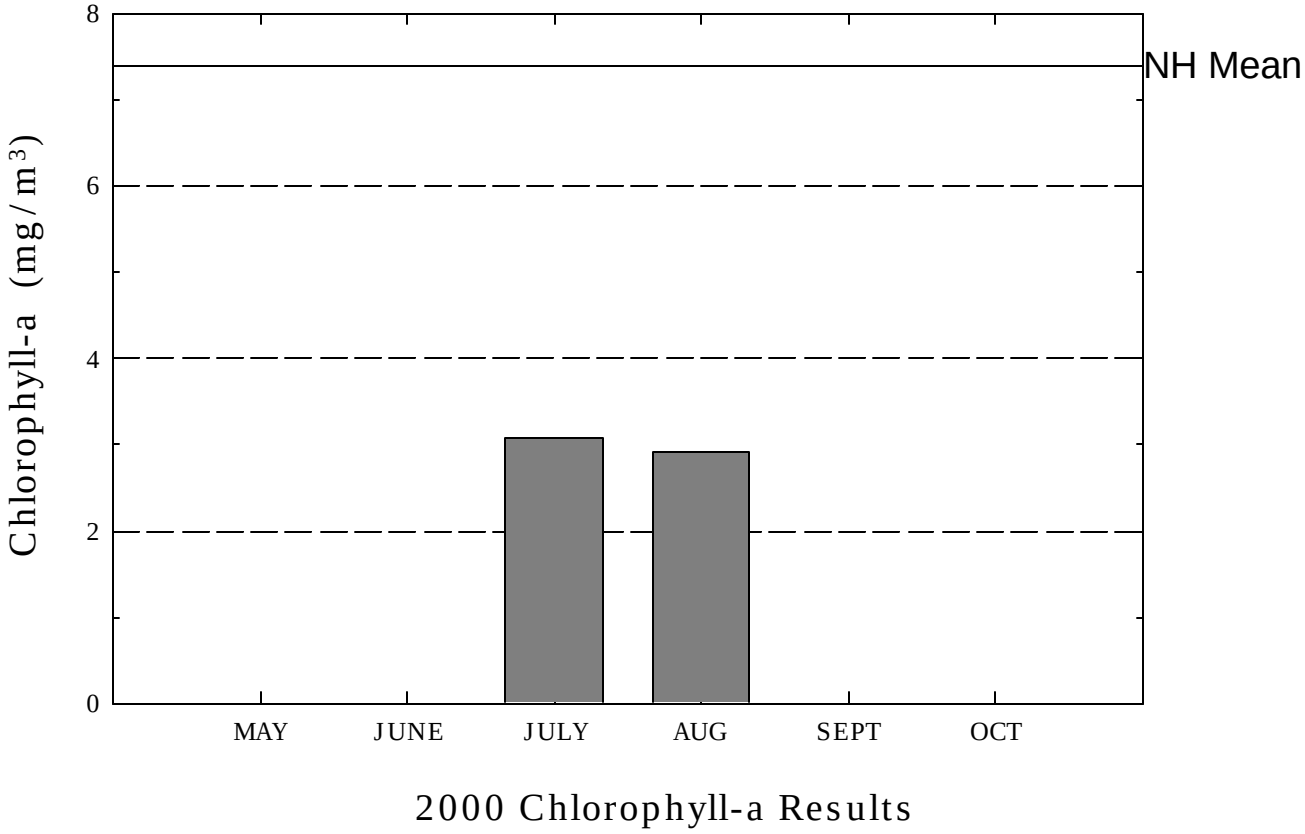
MEREDITH

Summary of current year and historic turbidity sampling.
Results in NTU's.

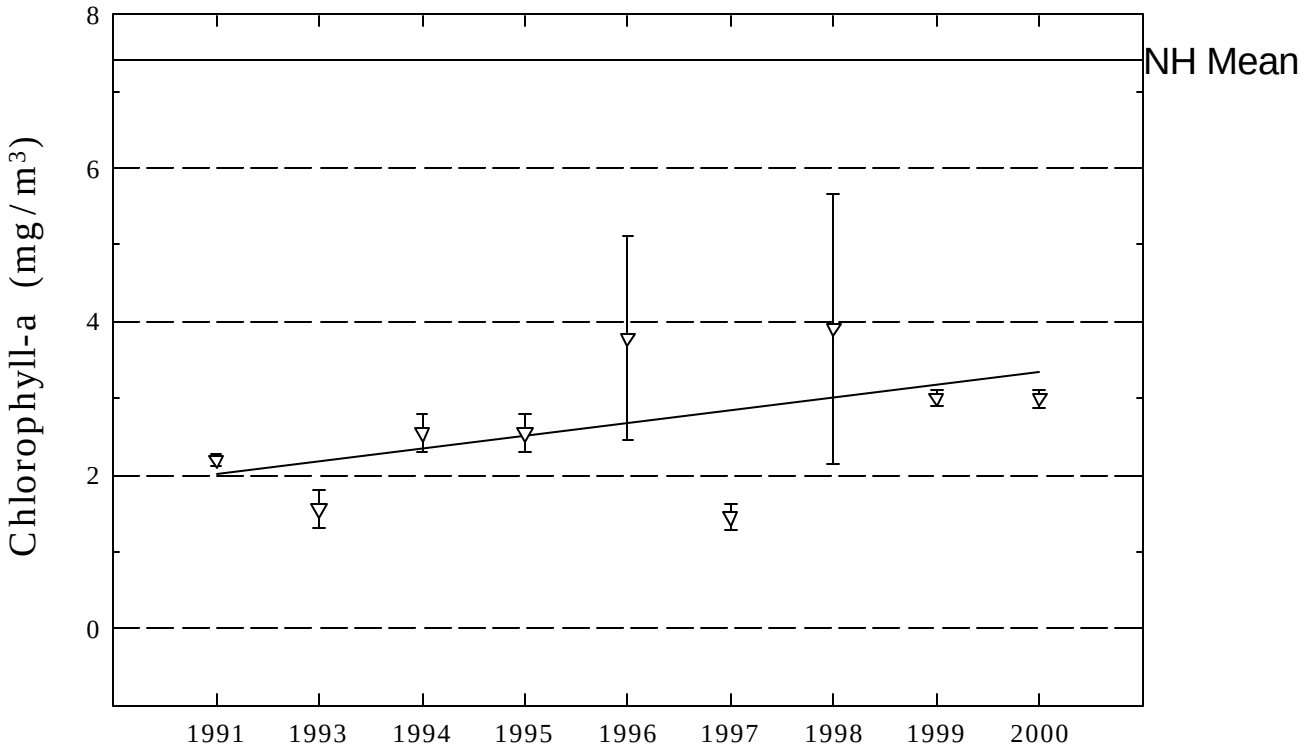
Station	Year	Minimum	Maximum	Mean
	1997	0.2	0.3	0.2
	1998	0.2	0.4	0.2
	1999	0.3	0.3	0.3
	2000	0.2	0.5	0.3

Lake Waukewan, Mayo

Figure 1. Monthly and Historical Chlorophyll-a Results



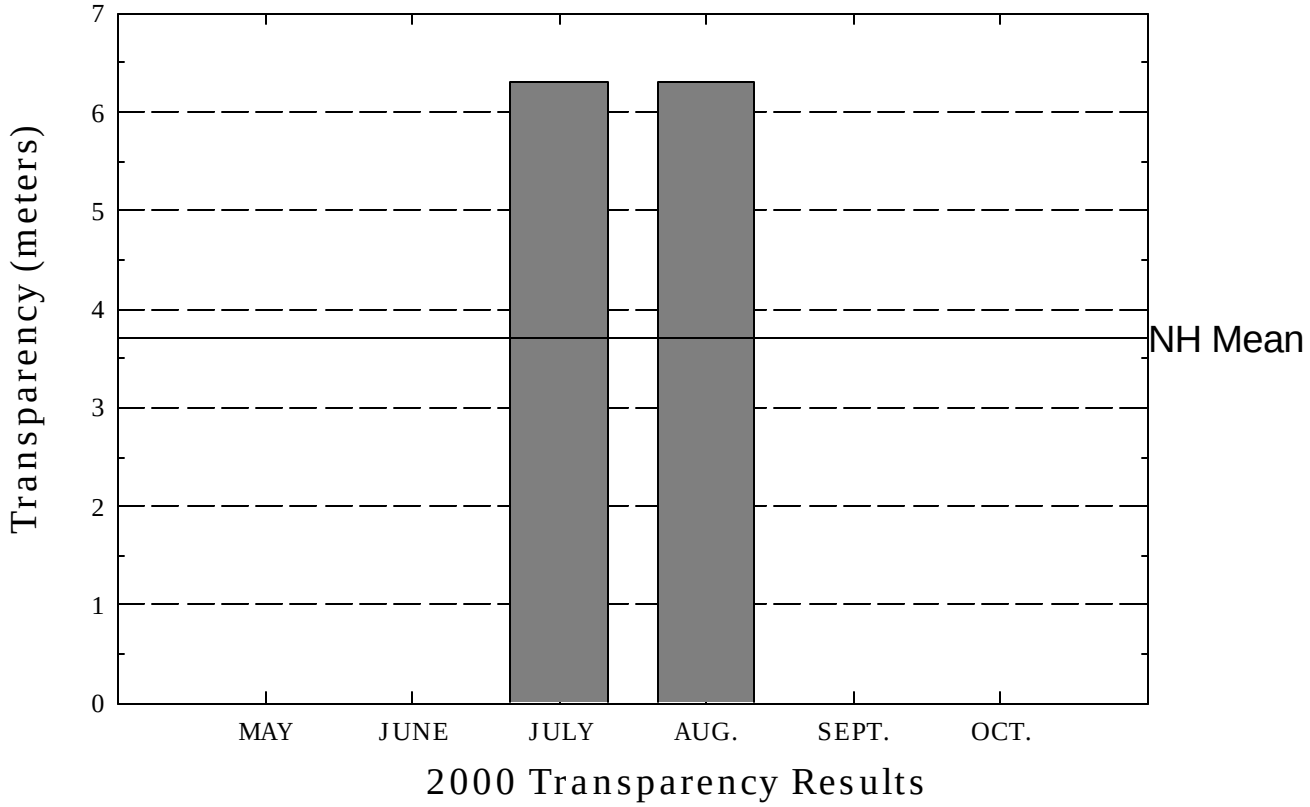
2000 Chlorophyll-a Results

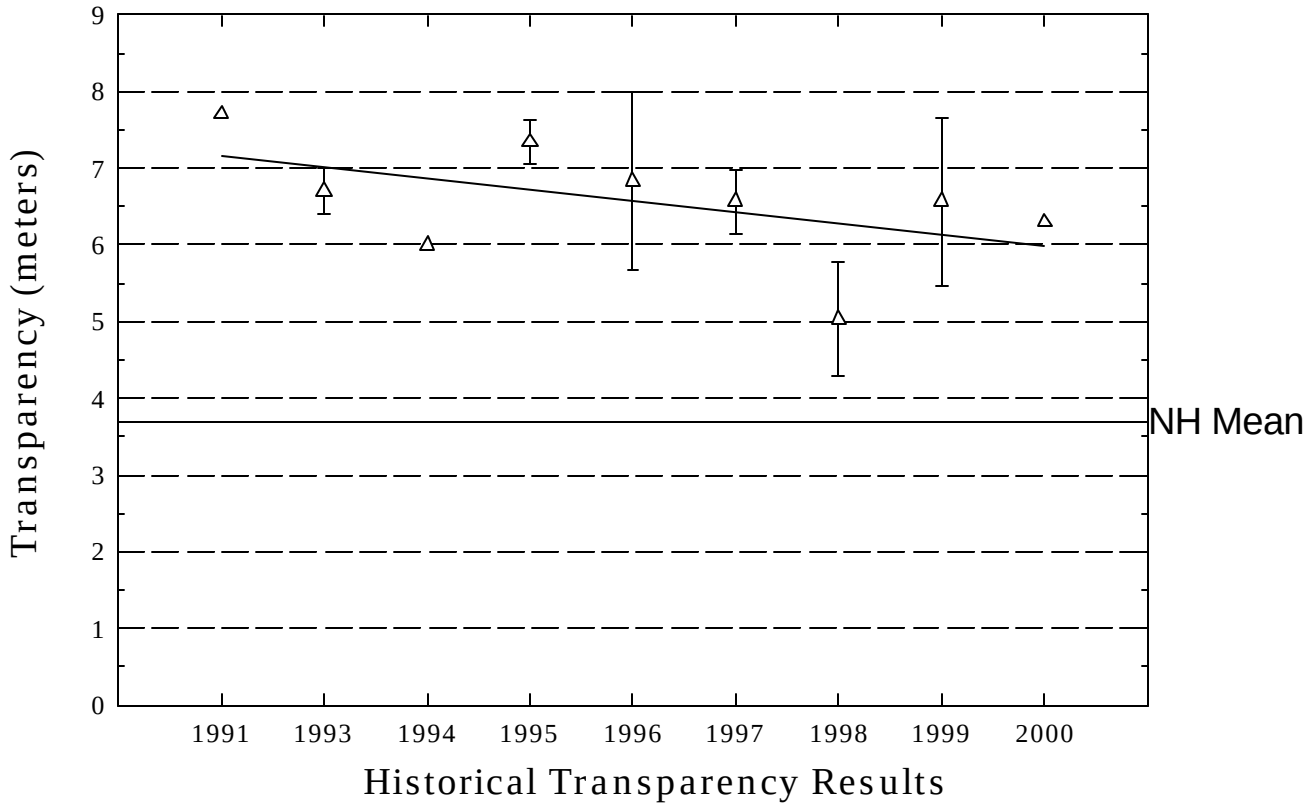


Historical Chlorophyll-a Results

Lake Waukewan, Mayo

Figure 2. Monthly and Historical Transparency Results





Lake Waukewan, Mayo

Figure 3. Monthly and Historical Total Phosphorus Data.

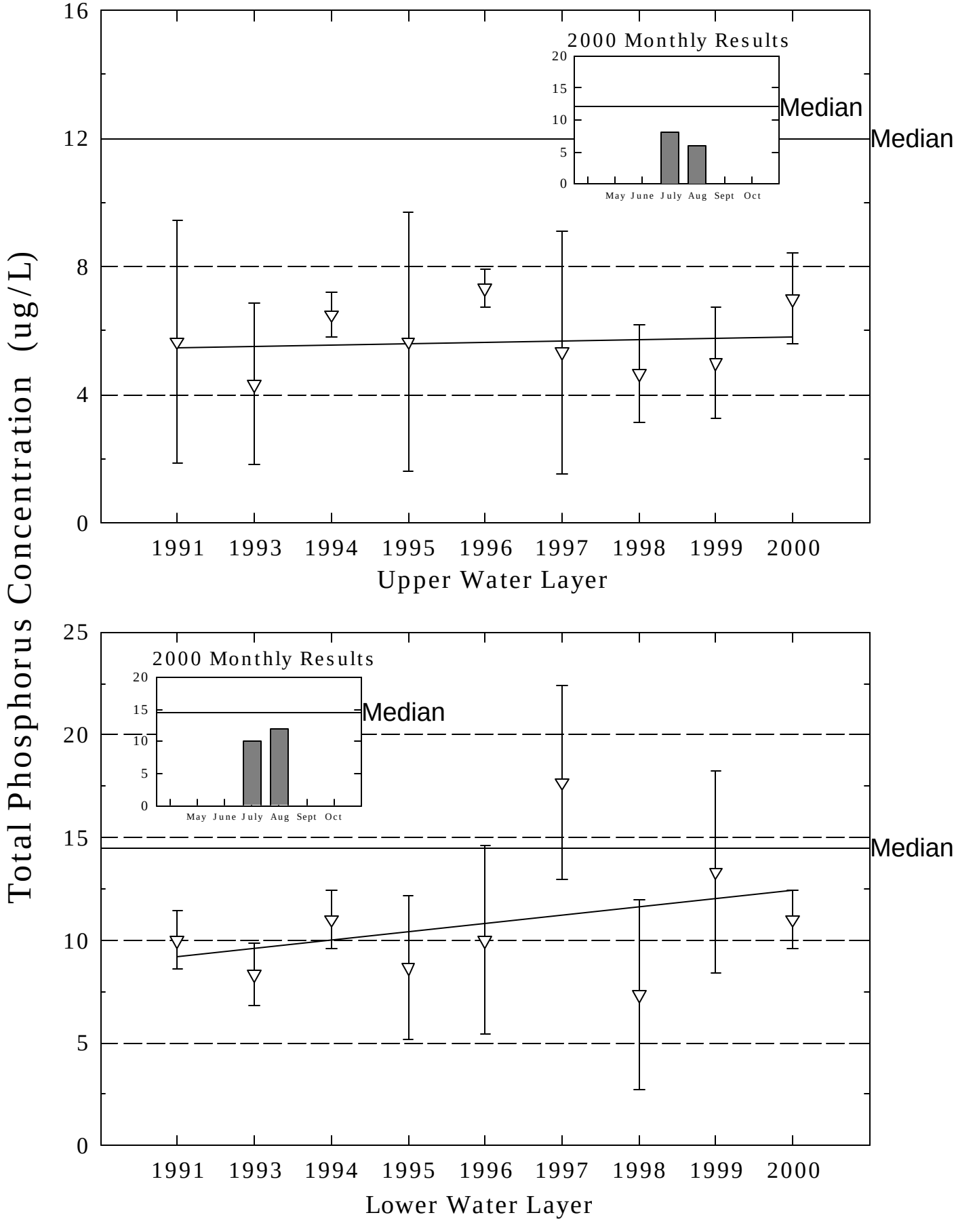


Table 1.

WAUKEWAN, LAKE MAYO

MEREDITH

Chlorophyll-a results (mg/m^3) for current year and historical sampling periods.

Year	Minimum	Maximum	Mean
1991	2.13	2.28	2.20
1993	1.28	1.78	1.55
1994	1.51	2.73	2.20
1995	2.37	2.73	2.55
1996	2.35	4.98	3.79
1997	1.28	1.61	1.45
1998	2.56	5.90	3.91
1999	2.94	3.08	3.01
2000	2.92	3.08	3.00

Table 2.

WAUKEWAN, LAKE MAYO

MEREDITH

Phytoplankton species and relative percent abundance.

Summary for current and historical sampling seasons.

Date of Sample	Species Observed	Relative % Abundance
05/31/1991	ANABAENA	11
	DINOBRYON	66
	ASTERIONELLA	10
07/19/1994	CHRYSOSPHAERELLA	42
	TABELLARIA	17
08/03/1995	CHRYSOSPHAERELLA	58
	DINOBRYON	12
	GLOEOCYSTIS	9
09/09/1996	CHRYSOSPHAERELLA	43
	DINOBRYON	23
	CERATIUM	14
07/08/1997	ASTERIONELLA	57
	TABELLARIA	22
	CHRYSOSPHAERELLA	14
07/09/1998	ASTERIONELLA	33
	SYNURA	32
	TABELLARIA	6
07/14/1999	SYNURA	25
	RHIZOSOLENIA	23
	CHRYSOSPHAERELLA	21
07/10/2000	RHIZOSOLENIA	40
	CHRYSOSPHAERELLA	38
	SYNURA	13

Table 3.

WAUKEWAN, LAKE MAYO

MEREDITH

Summary of current and historical Secchi Disk transparency results (in meters).

Year	Minimum	Maximum	Mean
1991	5.7	7.7	6.7
1993	6.4	7.0	6.7
1994	4.5	6.0	5.2
1995	7.0	7.5	7.3
1996	5.5	7.5	6.8
1997	6.1	6.9	6.5
1998	4.2	5.6	5.0
1999	5.3	7.2	6.5
2000	6.3	6.3	6.3

Table 4.

WAUKEWAN, LAKE MAYO

MEREDITH

pH summary for current and historical sampling seasons.
Values in units, listed by station and year.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1991	6.26	7.06	6.60
	1993	7.01	7.14	7.09
	1994	7.04	7.06	7.05
	1995	6.96	7.16	7.05
	1996	6.53	6.79	6.64
	1997	6.88	7.15	7.03
	1998	6.84	6.95	6.89
	1999	6.80	6.93	6.86
	2000	6.99	7.00	7.00
HYPOLIMNION				
	1991	6.22	6.48	6.34
	1993	6.29	6.63	6.44
	1994	6.20	6.35	6.25
	1995	6.25	6.58	6.40
	1996	6.29	6.56	6.44
	1997	6.20	6.44	6.27
	1998	6.20	6.40	6.26
	1999	6.12	6.48	6.27
	2000	6.17	6.30	6.23
METALIMNION				
	1991	6.89	7.09	7.00
	1993	7.02	7.05	7.03
	1994	6.82	6.89	6.86
	1995	6.43	7.18	6.71

Table 4.

WAUKEWAN, LAKE MAYO

MEREDITH

pH summary for current and historical sampling seasons.
Values in units, listed by station and year.

Station	Year	Minimum	Maximum	Mean
	1996	6.18	6.86	6.39
	1997	6.55	6.99	6.78
	1998	6.40	6.64	6.53
	1999	6.33	6.70	6.43
	2000	6.43	6.58	6.50

Table 5.

WAUKEWAN, LAKE MAYO

MEREDITH

Summary of current and historical Acid Neutralizing Capacity.
Values expressed in mg/L as CaCO .

Epilimnetic Values

Year	Minimum	Maximum	Mean
1991	5.90	5.90	5.90
1993	6.90	7.70	7.23
1994	6.80	7.60	7.23
1995	6.80	10.60	8.33
1996	5.70	6.50	6.13
1997	6.90	7.00	6.97
1998	6.40	7.30	6.77
1999	6.10	7.10	6.70
2000	6.90	7.30	7.10

Table 6.

WAUKEWAN, LAKE MAYO
MEREDITH

Specific conductance results from current and historic sampling seasons. Results in uMhos/cm.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1991	70.7	73.3	71.6
	1993	71.7	72.5	72.0
	1994	71.7	74.2	73.2
	1995	72.5	73.5	73.1
	1996	66.0	67.8	67.0
	1997	67.1	67.9	67.4
	1998	66.1	71.4	68.7
	1999	78.4	82.1	80.2
	2000	86.8	87.5	87.2
HYPOLIMNION				
	1991	70.9	72.2	71.6
	1993	68.3	69.7	69.2
	1994	70.3	72.4	71.3
	1995	71.6	72.7	72.2
	1996	68.8	69.8	69.2
	1997	68.3	77.1	71.4
	1998	72.9	90.7	79.3
	1999	80.5	90.1	84.3
	2000	86.4	87.5	87.0
METALIMNION				
	1991	70.8	72.5	71.7
	1993	69.3	73.2	70.9
	1994	70.2	74.5	72.4
	1995	72.1	74.3	72.8

Table 6.

WAUKEWAN, LAKE MAYO
MEREDITH

Specific conductance results from current and historic sampling seasons. Results in uMhos/cm.

Station	Year	Minimum	Maximum	Mean
	1996	68.4	68.5	68.4
	1997	66.0	68.2	67.0
	1998	72.0	72.9	72.3
	1999	77.7	79.2	78.4
	2000	85.6	88.3	87.0

Table 8.

WAUKEWAN, LAKE MAYO

MEREDITH

Summary historical and current sampling season Total Phosphorus data. Results in ug/L.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1991	3	10	5
	1993	2	7	4
	1994	6	13	8
	1995	2	10	5
	1996	7	8	7
	1997	1	8	5
	1998	3	6	4
	1999	3	6	5
	2000	6	8	7
HYPOLIMNION				
	1991	9	89	36
	1993	7	10	8
	1994	10	18	13
	1995	5	12	8
	1996	6	15	10
	1997	14	23	17
	1998	2	10	7
	1999	10	19	13
	2000	10	12	11
METALIMNION				
	1991	7	10	8
	1993	5	8	6
	1994	9	16	11
	1995	4	11	7

Table 8.

WAUKEWAN, LAKE MAYO

MEREDITH

Summary historical and current sampling season Total Phosphorus data. Results in ug/L.

Station	Year	Minimum	Maximum	Mean
	1996	8	11	9
	1997	3	12	7
	1998	3	8	6
	1999	6	10	8
	2000	8	11	9

Table 9.

WAUKEWAN, LAKE MAYO

MEREDITH

Current year dissolved oxygen and temperature data.

Depth (meters)	Temperature (celsius)	Dissolved Oxygen (mg/L)	Saturation (%)
		July 10, 2000	
0.1	21.9	7.4	84.2
1.0	21.8	7.4	83.9
2.0	21.5	7.4	83.9
3.0	21.4	7.4	83.8
4.0	21.3	7.4	83.8
5.0	21.3	7.5	84.3
6.0	20.1	8.3	91.8
7.0	16.9	8.6	88.4
8.0	14.6	7.4	72.5
9.0	13.4	6.5	62.7
10.0	11.6	6.4	58.5
11.0	9.7	6.2	54.7
12.0	8.7	5.8	50.2
13.0	8.1	5.3	45.1
14.0	7.8	5.2	43.7
15.0	7.5	4.4	36.9
16.0	7.5	3.2	26.9
17.0	7.4	2.7	22.7
18.0	7.5	2.4	20.2

Table 10.

WAUKEWAN, LAKE MAYO

MEREDITH

Historic Hypolimnetic dissolved oxygen and temperature data.

Date	Depth (meters)	Temperature (celsius)	Dissolved Oxygen (mg/L)	Saturation (%)
May 30, 1991	17.0	6.5	0.0	0.0
July 26, 1991	17.5	6.5	0.7	5.7
July 19, 1994	19.0	7.0	2.2	18.0
August 3, 1995	19.0	6.2	0.1	1.0
September 9, 1996	20.0	6.5	0.2	2.0
July 8, 1997	19.0	8.6	0.4	3.0
July 9, 1998	19.0	6.7	0.2	2.0
July 14, 1999	17.0	7.2	0.8	7.0
July 10, 2000	18.0	7.5	2.4	20.2

Table 11.

WAUKEWAN, LAKE MAYO

MEREDITH

Summary of current year and historic turbidity sampling.
Results in NTU's.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1997	0.2	0.3	0.2
	1998	0.2	0.8	0.4
	1999	0.2	0.4	0.3
	2000	0.2	0.2	0.2
HYPOLIMNION				
	1997	0.8	1.6	1.2
	1998	0.3	2.5	1.1
	1999	1.2	1.3	1.2
	2000	0.4	0.5	0.4
METALIMNION				
	1997	0.2	0.4	0.3
	1998	0.3	1.0	0.5
	1999	0.4	0.8	0.6
	2000	0.3	0.4	0.4